

Appendix C

Requirements

SPECTRUM OF JTAV

JTAV has been described as a system, a capability, and an activity. It is sometimes even discussed in terms of how the information is used (such as for redistribution and procurement offsets). Any of these descriptions of JTAV may be valid; however, each also obscures the basic JTAV concept. The JTAV concept is to obtain access to data, convert the data into useful information, present the information to the customer, and, where applicable, provide a customer with the ability to act on the information. Although those steps may appear to be an oversimplification, they serve as a useful point to examine JTAV functional requirements.

In order to accomplish its mission, each DoD component performs functional, operational, or business processes. Consequently, information systems and associated databases have been developed to support those processes. JTAV is not a process; rather it is a data sharing capability that supports many processes. Consequently, JTAV needs to be associated with one or more of those specific processes for its definition to gain clarity and be useful for implementation. JTAV requirements are dependent on organizations that use the capability to support one or more processes. As JTAV is primarily defined by the requirements, and the requirements are somewhat different for each supported process, the picture of JTAV from each organization performing those processes is also different. As a result, JTAV has been an elusive concept and continues to represent different concepts to many people.

ASSET CATEGORIES

One of the enduring JTAV concepts is the classification of assets into the categories of in-storage, in-process, and in-transit. In addition to being a classification of assets, the three categories describe locations where assets can be found in the logistics pipeline. All materiel assets are in one of the three categories, and all relevant JTAV data concerning those assets can be found in the databases supporting those categories.

In-Storage

In-storage assets include assets stored at retail supply, wholesale storage (both ashore and afloat), and disposal activities. They also include inventories held by maintenance activities to support repair and vendor-managed inventories as part of

vendor-DoD partnerships. This category encompasses all classes of supply. Integrated materiel managers (IMMs) own wholesale assets, such as depot stocks, or have access to them (e.g., Defense Reutilization and Marketing Service [DRMS]). Retail assets are assets maintained below the wholesale echelon. The following levels are the lowest retail supply levels where visibility of Class IX (repair and spare parts) assets is maintained:

- ◆ Army—authorized stockage lists
- ◆ Navy—shore activities and the portion of shipboard assets managed by the Navy Working Capital Fund
- ◆ Air Force—base supply
- ◆ Marine Corps—installation supply and Marine Expeditionary Force support activities.

Vendor managed inventory is a vital component of medical asset visibility and will be available in the medical data environment.

In-Process

They are not generally regarded as assets on-the-shelf since they have not been shipped, but because of potential near term delivery are of interest to war planners and warfighters. While the majority of assets in maintenance are not in condition for issue, adjustments may be made to process them ahead of schedule. These adjustments may be critical to maintaining operational readiness and having visibility at this level is an important part of the JTAV in-process effort.

- ◆ *Procurement.* Procurement assets include items a vendor has not yet delivered, some items owned by DoD and stored by a commercial vendor, and assets that DoD furnishes to vendors to produce other assets in support of DoD's requirements. For items being procured, visibility begins when a purchase request is prepared and ends when a DoD component's representative inspects and issues a receipt for the ordered asset.
- ◆ *Maintenance.* Assets in repair can serve as a source of supply. DoD's need for repair visibility ranges from specific data (such as estimated completion dates and condition changes by stock number and serial number) to broad aggregated data that support program, budget, and readiness assessments.

Critical to this aspect of JTAV is access to service and maintenance AISs and the establishment of key relationships with the IMM and the weapon system program manager.

In-Transit

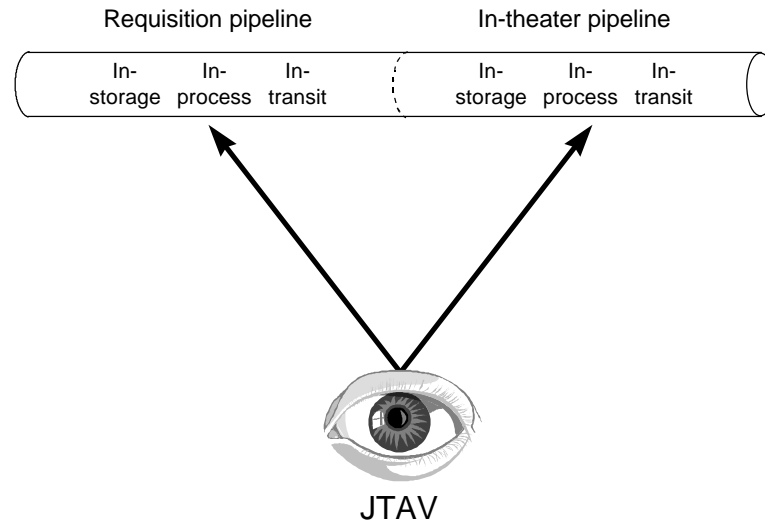
The third category, ITV, focuses on the movement of assets from origin to destination. DoD needs to be able to identify the contents of a shipment and monitor its movement throughout the logistics pipeline. DoD also needs the ability to track item, unit, and personnel movements as well as be able to reconstitute and divert shipments. GTN, developed by USTRANSCOM, the functional proponent of ITV, is the key to the in-transit portion of JTAV. GTN receives movement data from many source systems. *The Defense Intransit Visibility Integration Plan (Revised 1997)* provides a detailed discussion of ITV; GTN; and associated requirements, timelines, and milestones.¹

REQUISITION AND IN-THEATER STATUS

Although requisition and in-theater status are sometimes equated with the three asset categories, this view is not correct. Requisition and in-theater status are ways of viewing data obtained from one or more of the asset categories. For example, all requisitions and all assets in a theater are in one of the three categories (Figure Appendix C -1)—making the asset categories sources of property *and* information. The transportation and maintenance processes are users of information as well as providers of materiel. Consequently, an *in-transit* asset is an item we want information about, whereas the *transportation process* needs information to function efficiently. The result is that the time-tested concepts of in-storage, in-transit, and in-process are primarily useful in terms of identifying databases and accessing data. Requisition tracking and in-theater visibility, among other user needs, are more useful when seen as ways of providing information to users. The JTAV concept views the asset pipeline as a continuum; assets move from outside to inside a theater, from one location within a theater to another, or from inside a theater to outside the theater in the same pipeline. Clearly one of the more important JTAV customers is the CINC. As depicted in Figure Appendix C -1, each of the standard asset categories is included in the CINC's theater.

¹ U.S. Transportation Command, *Defense Intransit Visibility Integration Plan (Revised 1997)*, May 1997.

Figure Appendix C -1. Requisition Tracking and In-Theater Visibility



PERSONNEL VISIBILITY

The current JTAV architecture provides automated logistics and personnel asset visibility for a JTF commander or a CINC of a unified command. The JTAV capability consists of the hardware, software, interfaces, policies, and procedures to provide commanders with total asset visibility. This visibility includes in-theater and global-level logistics and personnel data provided to the Joint Staff, OSD, and military service headquarters as well as theater JTAV users. The JTAV logistics and personnel data environment provides users with the capability to quickly locate logistics and personnel resources anywhere in the world. The ability of a CINC or JTF commander to trace the status of all personnel assigned or attached to the JTF is an integral part of JTAV. Personnel readiness is a critical element in assessing force readiness. Consequently, the ability to assess personnel strengths and establish personnel accountability throughout the military services has been a long-term goal of The Joint Staff. *Joint Personnel Asset Visibility* (JPAV) is the capability to identify, locate, and track U.S. forces (both units and individuals) as they enter into, move within, and redeploy for a JTF's area of responsibility.² U.S. forces include active and Reserve military components, DoD civilians, contractors, and non-DoD government personnel. JPAV information requirements can also extend to foreign military personnel assigned to support U.S. missions when required by CINCs and JTF commanders. The following primary goals have been established for JPAV:

- ◆ Facilitate time-phased analysis of personnel requirements, personnel availability, and levels of demographic data, including occupational skill and language skills

² JPAV is also the name of the system being developed to provide JPAV capabilities.

- ◆ Provide tools to quickly locate personnel with specified skills for potential reallocation in a JTF
- ◆ Convert DoD, Joint Staff, military service, and other unique codes into clear text
- ◆ Generate the Joint Personnel Status Report (a JTF J-1 report)
- ◆ Archive files to the Defense Manpower Data Center.

The JPAV system supports—but does not replace—existing personnel systems of the military services. JPAV uses existing personnel databases and data elements of the military services. JTAV fuses demographic, in-transit, and in-theater data to present a joint service, composite view of persons and skills in a theater of operations. JPAV is compatible with existing military service applications and complies with the GCCS's common operating environment and integration standards.

The personnel module uses both client-server and Web-based architecture to permit full integration as a module on the JTAV desktop. When deployed, the personnel module (i.e., JPAV) database is collocated on the JTAV communications servers that ensure access control to the personnel database in keeping with provisions of the Privacy Act. The JTAV platform includes query-processing capabilities, database management, and communications services in a DII and COE-compliant environment.

JPAV was prototyped to USEUCOM to support Operation Joint Endeavor. The deployment was very successful in highlighting several personnel issues, including integration of unique CINC personnel data sources, the complexity of CINC and JTF situation reporting, and the lack of data standardization among the military services. Each issue has been included in the rapid prototyping approach. Future JPAV deployments will be directed by The Joint Staff in conjunction with CINC J-1 staffs and the JTAV Office. JPAV deployment requires JTAV infrastructure, on-site support staffs, and CINC security accreditation.

The personnel module is a function module of JTAV; therefore, costs associated with operational fielding of the module are equivalent to the costs associated with fielding other JTAV capabilities. Operational fieldings can be supported by contractors on a cost-reimbursement basis. Software license costs are fully covered for the period of contractor support. All licenses are titled to the U.S. government and are transferable to a CINC when system support migrates.

JTAV REQUIREMENTS BY USER

JTAV requirements documents have historically included the three asset categories (in-storage, in-transit and in-process) as well as other categories—in-theater, requisition tracking, and special commodities (such as ammunition and medical sup-

plies). That format has obscured the nature of the requirements because it mixes sources of data, users, commodities, and logistics processes. That format can also confuse requirements to provide data with requirements to use data. This appendix focuses strictly on the requirements of users of data from the perspective of the asset pipeline.

JTAV supports many processes and the definition gains added meaning each time JTAV is associated with a new process. As a result, JTAV functional requirements are actually the requirements of those functional processes for JTAV data. Consequently, several studies have recorded JTAV functional requirements, which are based on requirements generated by customers. The best compilation of JTAV functional requirements can be found in the *Functional Requirements Document for Joint Total Asset Visibility*.³ This appendix provides a sample of user requirements to provide a functional perspective.

End Users

An end user is an organization (or person) that is the ultimate consignee or uses the item. End users should have visibility of in-transit shipments (both inbound and outbound), including individual items, delivery quantities, and expected delivery dates. ITV and transportation systems that collect movement data do not automatically notify customers about assets inbound to their location and the expected delivery times. End users also need the ability to inquire as to movement status using standard data terminology, such as a requisition number, purchase order number, unit identification, transportation account codes, transportation control number, container number, conveyance number, and unit line number. Finally, end users need visibility of wholesale assets to execute operational planning responsibilities.

Retail Supply Activities

Retail supply activities are normally the organizations that requisition and store items at unit or base level. Retail supply activities should have the capability to obtain item and shipment information for all outbound and inbound shipments, including outstanding requisitions. Retail inventory managers also need visibility of all DoD-owned assets, including wholesale, retail, and “nontraditional” supply inventories, as well as assets due in from procurement and repair. Additionally, consumer-level retail activities in the same supply chain require visibility of assets at intermediate-level retail supply activities.

³ JTAV Office, *Functional Requirements Document for Joint Total Asset Visibility*, July 1997.

CINCs

The CINCs' primary requirement for JTAV is a force-tracking tool. The CINCs' staffs need to be able to find, see, and move assets and relate them to unit combat readiness. The staff also needs to be able to relate personnel identification numbers and characteristics (including skills, gender, home of origin, race, and religion) to personnel in-theater. A CINC's logistics staff requires the ability to identify available transportation to move noncombatants to staging facilities and from staging facilities to ports of debarkation. CINC staffs also need access to unit readiness postures, including training status, equipment readiness status, and available load dates for deployment. Finally, CINC medical managers need to have rapid access to current patient status, location, and movement.

Joint Task Force

A JTF is a military organization composed of more than one military service that is established on a temporary basis under the control of the Chairman of the Joint Chiefs of Staff. The JTF commander is frequently the theater commander. JTF staffs require visibility of the readiness status and actual movement of all forces (active and reserve) deploying to the theater. JTF planning staffs require visibility of outstanding requisitions to assess contingency operations and prepare operational plans. JTF staffs should also have aggregate visibility of assets at depot- and intermediate-level maintenance facilities to assess readiness, identify and manage critical items, identify logistics bottlenecks, establish priorities, and determine asset and lift requirements. JTF medical managers need to have rapid access to current information about patient status, location, and movement.

Intermediate and Depot Maintenance

Intermediate-level and depot-level maintenance share many materiel and logistics support characteristics. Both require visibility into materiel availability to support repair and overhaul production schedules. Both require detailed information pertaining to requisition status and shipping information. Both activities maintain in-storage and in-process asset classes.

Command and Management Levels

The information needs of OSD, Joint Chiefs of Staff, and military service headquarters are generally similar. In most cases, any difference merely exists in the level of aggregation.

- ◆ *Office of the Secretary of Defense.* OSD logistics staff elements require access to logistics responsiveness between nodes to monitor and study potential improvements in logistics response time. OSD also needs visibility

over broad categories of in-repair assets to monitor logistics system performance; support major industrial mobilization decisions; and evaluate policy, budget, and procurement alternatives.

- ◆ *Joint Staff.* The Joint Staff requires visibility of assets due in from procurement and maintenance to assess contingency plans and prepare special operations plans. Joint Staff medical managers need rapid access to current information about patient status, location, and movement. The Joint Staff also needs visibility of the readiness status and actual movement of all deploying forces (active and Reserve).
- ◆ *Military service and major command headquarters.* Headquarters and major commands include any organizational level above a unit or base that encompasses more than one unit. Headquarters require visibility of outstanding requisitions for units under their command to monitor the status of critical orders. Logistics and personnel staffs should have visibility of the readiness status and actual movement for unit equipment, accompanying supplies, and personnel moving to, from, and within a theater and be able to associate actual movement data with specific line items in a deployment plan. Major commands need visibility of assets at depot- and intermediate-level maintenance organizations when developing plans, assessing the ability to execute plans, managing critical items, and making financial decisions.

Inventory Control Points and Integrated Materiel Managers

To fill customer requisitions, determine procurement quantities, replenish asset levels, and make repair and disposal decisions, IMMJs need visibility of all whole-sale assets they directly manage. IMMJs that are PICAs require visibility of all SICA assets and requirements. IMMJs that are SICAs require visibility of all PICA assets and requirements. IMMJs need the ability to obtain item and shipment information for all inbound and outbound shipments they initiate. They also require visibility of DRMS assets under repair at intermediate- and depot-level repair facilities as well as excess inventories held by those facilities. Additionally, they need visibility of government-furnished materiel, contractor logistics support, program manager materiel, unit-level assets, and retail assets and requirements.

Weapon System Managers

Weapon system managers require visibility of new weapon systems en route to field units, in-transit information of parts shipments, and notification of discrepancies that have been incurred while in-transit. They also need aggregate and detailed visibility of depot- and intermediate-level maintenance assets to assist in planning, deploying, and managing of their weapon system. Finally, weapon system managers require the visibility of DoD assets and requirements to assess logistics support capabilities and monitor an item's use.

SUMMARY

Historically, each DoD component developed and maintained information systems to meet its functional requirements. Consequently, information systems and their associated databases have evolved to support functional processes. Although satisfying the needs of the DoD component, this evolutionary process has drawbacks for the joint community, particularly in terms of interoperability and information sharing.

One of the enduring JTAV concepts involves the asset categories of in-storage, in-process, and in-transit. The three categories are not only a means to classify assets, but also describe locations where assets can be found in the logistics pipeline. All materiel assets are in one of those three categories and all relevant JTAV data concerning those assets can be found in the databases supporting those categories. As a result, the three asset categories can also be seen as categories of data sources. The basic JTAV concept requirements are to obtain data, convert the data into useful information, and present the information to a customer.

